

## PROPOSED AMENDMENT

Ser. No. 10/604,997

Ok to  
enter  
8/28/07  
R.N.

1. (Currently Amended) A method for analyzing packetized network traffic comprising the steps of:
  - a. receiving a copy of said network traffic comprising one or more streams;
  - b. filtering said received network traffic to isolate each stream from said one or more streams; and
  - c. forwarding packetized data corresponding to each stream to a native streaming interface, said native streaming interface providing minimum time distortion as compared to said network traffic to permit media stream analysis and monitoring to indicate said network's influence on each isolated stream and measure each isolated stream's conformance to a pre-determined stream standard;
  - d. computing statistics associated with each isolated stream, said statistics comprising at least a delay factor (DF) parameter defining an instantaneous flow rate balance representing a virtual buffer delay that is needed to prevent data loss and absorb network jitter growth; and
  - e. forwarding, for each isolated stream, said computed statistics to a data consumer.
2. (CANCELLED)

3. (Currently Amended) The method for analyzing packetized network traffic, as per ~~claim 2~~claim 1, wherein said computed statistics additionally comprises a media loss rate (MLR) parameter representing number of media packets lost or corrupted.
4. (Currently Amended) A system for analyzing packetized network traffic comprising:
  - a. one or more interfaces to forward a copy of said network traffic comprising one or more streams;
  - b. one or more filters to receive and filter said forwarded network traffic to isolate each stream from said one or more streams; ~~and~~
  - c. a native streaming interface to receive packetized data corresponding to each isolated stream, said native streaming interface providing minimum time distortion by determining an arrival time of a given packet to be as close to when it is received by said interface in (a) to permit media stream analysis and monitoring to indicate said network's influence on said each isolated stream and measure each isolated stream's conformance to a pre-determined stream standard;
  - d. a compute engine to compute statistics associated with said at least one isolated stream, said statistics for each stream comprising at least a delay factor (DF) defining an instantaneous flow rate balance representing a virtual buffer delay that is needed to prevent data loss and absorb network jitter growth; and
  - ~~e.~~ one or more interfaces to forward said computed statistics for said one or more streams of interest to a data consumer.

5. (CANCELLED)
6. (Currently Amended) The system for analyzing packetized network traffic, as per ~~claim 5~~claim 4, wherein said computed statistics additionally comprise a media loss rate (MLR) parameter, said MLR representing number of media packets lost or corrupted.
7. (Previously Presented) A method for analyzing packetized network traffic comprising one or more streams, said method comprising the steps of:
  - a. receiving said network traffic comprising one or more streams;
  - b. filtering said received network traffic and isolating at least one stream from said one or more streams;
  - c. computing statistics associated with each isolated stream, said statistics comprising at least a delay factor (DF) parameter defining an instantaneous flow rate balance representing a virtual buffer delay that is needed to prevent data loss and absorb network jitter growth; and
  - d. forwarding, for each isolated stream, said computed statistics to a data consumer.
8. (Previously Presented) The method for analyzing packetized network traffic comprising one or more streams, as per claim 7, wherein said computed statistics additionally comprise a media loss rate (MLR) parameter representing number of media packets lost or corrupted.

9. (Cancelled)
10. (Cancelled)
11. (Previously Presented) The method for analyzing packetized network traffic comprising one or more streams, as per claim 7, wherein said method further comprises the step of recovering control information associated with said one or more streams and forwarding said recovered control information to said data consumer.
12. (Cancelled)
13. (Cancelled)
14. (Previously Presented) The method for analyzing packetized network traffic comprising one or more streams, as per claim 7, wherein bandwidth for forwarding said computed statistics to a data consumer is allotted in an on-demand manner by increasing said bandwidth usage when computed statistics indicate a warning.
15. (Previously Presented) The method for analyzing packetized network traffic comprising one or more streams, as per claim 7, wherein said computed statistics additionally comprise any of the following: stream instantaneous bit-rate, average bit-rate, deviation from nominal bit-rate, minimum and maximum deviation from

nominal bit-rate, instantaneous flow rate deviation, or minimum and maximum instantaneous flow rate deviation.

16. **(Cancelled)**
17. **(Previously Presented)** The method for analyzing packetized network traffic comprising one or more streams, as per claim 14, wherein the number of said computed statistics or a rate at which said statistics are computed is reduced during benign network conditions and increased for detailed analysis of each of said isolated streams.
18. **(Previously Presented)** The method for analyzing packetized network traffic comprising one or more streams, as per claim 7, wherein said instantaneous flow rate balance value is computed from said each isolated stream via a counter computing an instantaneous flow rate and said counter registers a deviation from nominal as an indication of the flow's instantaneous accumulated jitter for forwarding to said data consumer.
19. **(Previously Presented)** The method for analyzing packetized network traffic comprising one or more streams, as per claim 18, wherein said instantaneous flow rate balance value is periodically cleared to avoid monotonically increasing values due to differences in calculated bit rate values caused by offset or drift in frequency in a local clock source.

20. (Cancelled)
21. (Previously Presented) The method for analyzing packetized network traffic comprising one or more streams, as per claim 7, wherein said method further comprises the step of implementing a quality of service (QOS) metering scheme based upon adjusting traffic priority between said forwarded computed network statistics and said streaming network traffic.
22. (Previously Presented) An article of manufacture comprising computer usable medium encoded with computer executable instructions embodied therein which analyzes packetized network traffic comprising one or more streams, said medium comprising:
- a. computer executable instructions aiding in receiving said network traffic comprising one or more streams;
  - b. computer executable instructions filtering said received traffic and isolating at least one stream from said one or more streams;
  - c. computer executable instructions computing statistics associated with each isolated stream, said statistics comprising at least a delay factor (DF) parameter defining an instantaneous flow rate balance representing a virtual buffer delay that is needed to prevent data loss and absorb network jitter growth; and
  - d. computer executable instructions aiding in forwarding said computed statistics to a data consumer.

23. **(Previously Presented)** The article of manufacture comprising computer usable medium encoded with computer executable instructions embodied therein which analyzes packetized network traffic comprise one or more streams, as per claim 22, wherein said computed statistics additionally comprises a media loss rate (MLR) parameter representing number of media packets lost or corrupted.
24. **(Previously Presented)** The article of manufacture comprising computer usable medium encoded with computer executable instructions embodied therein which analyzes packetized network traffic comprising one or more streams, as per claim 22, wherein said medium further comprises computer executable instructions encoding said computed statistics prior to forwarding.
25. **(Cancelled)**
26. **(Cancelled)**
27. **(Previously Presented)** A system analyzing packetized network traffic comprising one or more streams, said system comprising:
- a. one or more network interfaces to receive streaming network traffic associated with said one or more streams;
  - b. a filter and compute engine to filter one or more streams of interest in said one or more streams and compute statistics associated with said one or more streams of interest, said statistics for each stream comprising at least a delay factor (DF)

defining an instantaneous flow rate balance representing a virtual buffer delay that is needed to prevent data loss and absorb network jitter growth for said stream; and

- c. one or more interfaces to forward said computed statistics for said one or more streams of interest to a data consumer.

- 28. **(Previously Presented)** The system analyzing packetized network traffic comprising one or more streams, as per claim 27, wherein said computed statistics additionally comprise a media loss rate (MLR) parameter representing number of media packets lost or corrupted.
- 29. **(Cancelled)**
- 30. **(Cancelled)**
- 31. **(Cancelled)**
- 32. **(Previously Presented)** The system analyzing packetized network traffic comprising one or more streams, as per claim 27, wherein said instantaneous flow rate balance value is computed from said one or more streams of interest via a counter computing an instantaneous flow rate and said counter registers a deviation from nominal as an indication of the flow's instantaneous accumulated jitter for forwarding to said data consumer.



33. **(Previously Presented)** The system analyzing packetized network traffic comprising one or more streams, as per claim 27, wherein said instantaneous flow rate balance value is periodically cleared to avoid monotonically increasing values due to differences in calculated bit rate values caused by offset or drift in frequency in a local clock source.
34. **(Cancelled)**
35. **(Previously Presented)** The system analyzing packetized network traffic comprising one or more streams, as per claim 27, wherein said one or more interfaces forward said computed statistics to a data consumer in an in-band manner by sharing network transmission bandwidth between said streaming network traffic and computed statistics.
36. **(Previously Presented)** The system analyzing packetized network traffic comprising one or more streams, as per claim 27, wherein a quality-of-service (QOS) metering scheme is implemented based upon adjusting traffic priority between said computed statistics and said streaming network traffic.
37. **(Previously Presented)** The system analyzing packetized network traffic comprising one or more streams, as per claim 27, wherein frequency of said computed statistics to be forwarded is scaled linearly with bandwidth associated with said one or more interfaces used to forward said computed statistics.

38. **(Previously Presented)** The system analyzing packetized network traffic comprising one or more streams, as per claim 27, wherein at least one of said interfaces is a native streaming video interface forwarding a streaming media payload, said native streaming video interface providing minimum time distortion to permit media stream analysis and monitoring by a native streaming media analyzer.
39. **(Cancelled)**
40. **(Previously Presented)** A system analyzing packetized network traffic comprising one or more streams, said system comprising:
- a. one or more network interfaces to receive streaming network traffic associated with said one or more streams;
  - b. one or more filters to filter one or more streams of interest in said one or more streams;
  - c. a compute engine comprising one or more finite state machines to compute index values associated with said one or more streams of interest, said index values for each stream comprising at least a delay factor (DF) and a media loss rate (MLR), said DF defining an instantaneous flow rate balance representing a virtual buffer delay that is needed to prevent data loss and absorb network jitter growth for said stream, and said MLR representing number of media packets lost or corrupted for said stream; and
  - d. one or more interfaces to forward said computed index values for said one or more streams of interest to a data consumer.

- 41. (Cancelled)
- 42. (Cancelled)
- 43. (Cancelled)
- 44. (Cancelled)
- 45. (Previously Presented) The system analyzing packetized network traffic comprising one or more streams, as per claim 40, wherein a quality-of-service (QOS) metering scheme is implemented based upon adjusting traffic priority between said computed index values and said streaming network traffic.
- 46. (Previously Presented) The system analyzing packetized network traffic comprising one or more streams, as per claim 40, wherein frequency of said computed index values to be forwarded is scaled linearly with bandwidth associated with said one or more interfaces used to forward said computed index values.
- 47. (Previously Presented) The system analyzing packetized network traffic comprising one or more streams, as per claim 40, wherein at least one of said interfaces is a native streaming video interface forwarding a streaming media payload, said native streaming video interface providing minimum time distortion to permit media stream analysis and monitoring by a native streaming media analyzer.